ACTION SUMMARY

SPECIAL BOARD WORKSHOP MEETING

April 14, 2007 – 9:00 a.m.

Administration Building
2101 Hurley Way, Sacramento, CA

HELICOPTER PROGRAM
Workshop Facilitator – Arthur J. Negrette
Flight Safety Institute

CALL TO ORDER

Vice President Trujillo called the meeting to order. Board Members Present: Clark, Jones, Lawson, Trujillo, Valley. Directors Engellenner, Goold, Granados, Kelly, absent.

Staff: Fire Chief Mette, General Counsel Margarita, Board Clerk Tilson, Deputy Chief Wynn Latta, Deputy Chief Geoff Miller, Assistant Chief Mike Johnson, Assistant Chief Greg Mugartegui, Captain Dave Stoddard, Captain Kevin Wegener, Engineer Maurice Johnson, Public Information Officer Christian Pebbles, and Air Operations crew members: Captain Mike Ernst, Flight Officer; Captain Rick Griggs, Flight Officer; Pat Van Den Broke, Pilot; Captain Dave Durham, Crew Chief.

PLEDGE

PUBLIC OPPORTUNITY TO DISCUSS MATTERS OF PUBLIC INTEREST WITHIN DISTRICT JURISDICTION ON ITEM (S) SCHEDULED ON THE AGENDA: None

HELICOPTER PRESENTATION:

1. HELICOPTER CONCEPTS AND TERMS OF REFERENCE

2. REGULATORY FRAMEWORK
- **A. Role of Various Governmental Agencies**

3. HELICOPTER TECHNICAL CONSIDERATIONS
- **A. Operational Performance**
- **B. Mission Capabilities**
- **C. Airworthiness**
- **D. Aircraft Limitations and Restrictions**

4. HELICOPTER RELATED ISSUES
- **A. Existing and Potential SMFD Missions**
- **B. Helicopter Operational Safety and Statistical Data**
- **C. Single-Engine vs. Multi-Engine Helicopters**
- **D. Military vs. Civil Helicopters**

5. AIRCRAFT AND OPERATIONAL OPTIONS FOR SACRAMENTO METROPOLITAN FIRE DISTRICT
- **A. Status Quo**
- **B. Next Generation**

Art Negrette of the Flight Safety Institute stated he was retained as a consultant to review the District's Helicopter Program, operations, management, and to take a snapshot of where the program was now and provide some direction for the next five or ten years. The primary focus for this workshop was on the aircraft and operations, which essentially dictates the kind of equipment, aircraft and performance capabilities that will be needed. The final report will include several other facets: program management, staffing, organizational structure, etc.

Copies of his Aircraft Performance and Flight Operations slide presentation were distributed. The outlined subject matter was explained in detail.

The slide presentation included, among other things:

- Definitions of various aircraft program terminology.

- Accident and fatal accident rates in aviation are calculated in ratio to exposure or the number per 100,000 flying hours.

- The Federal Aviation Administration (FAA) regulates aviation but does not regulate military or "Public Aircraft" in most parts. Metro 1 is a Public Aircraft and is in many ways exempt from the FAA regulatory requirements applicable to "civil" aircraft such as the engineering, maintenance, inspection, pilot qualifications and medical certification, operating procedures, equipment on the aircraft. Under the exemption, Public Aircraft is not used to transport persons or property for commercial purposes. Cost-reimbursement between two government agencies can be accomplished if certain requirements are met: written agreement in place; there is a significant and imminent threat to life or property; and that no other private operator was available.

- Hover OGE (out of ground effect) takes more power resulting in a decreased useful load and occurs when the helicopter hovers at a height of more than the diameter of the main rotor blade. Hover IGE (in ground effect) takes less power resulting in an increased useful load.

- Comparative analysis of "Maximum" payload and Hover In Ground Effect (IGE) performances between Metro 1 (UH-1H) and alternative helicopters: Bell-210, Bell-212 (2 engine) meets civilian standards, and Bell-412EP (2 engine with 4-bladed rotor system) certified by FAA as a civilian helicopter.

- Typical "Height-And-Velocity" Diagram demonstrating a steady-state constant airspeed and constant altitude and caution areas.

- Charts illustrating cause of Accident and Incident rates for the various types of helicopters from 1982-2007.

- Comparative analysis of turbine helicopter accident rates for single engine vs. multi-engine civil helicopters from 1990-2005. Multi-engine helicopters have a lower accident rate.

- Pie charts on "Type" of Metro 1 incident responses, with grass fires at 81.2% for 2005 and 77.6% in 2006.

- Graphs for 2005 and 2006 illustrating Metro 1 monthly incident responses with a breakout between grass fires and all other types.

- Graphs for 2005 and 2006 illustrating percentage of "Grass Fire Responses" requiring water drops by Metro 1. 84.5% required around 5 water drops.

- Pie charts of "Jurisdiction" of Metro 1 incident responses with a percentage breakdown of response areas: 191 responses in 2005 with 72.8% within the District; 223 responses in 2006 with 79.8% within the District.

  In response to Director Jones, Mr. Negrette stated the number of hours flown for each jurisdiction was not shown but agreed that the data could be extracted if desired.

- Pilots for a public agency with a Public Aircraft technically do not need an FAA certificate. It was recommended in the best interest of the District to include as part of the job description that pilots be FAA certified.

- The new generation helicopter should have more capability with strategy focused on a faster initial response even if the responses are not water drops.

CONCLUSIONS:

- Missions dictate aircraft and equipment configuration.

- Sacramento Metropolitan Fire District's Mission Statement can be "multi-faceted" or "single-purpose" depending on the Board of Directors policy:
  - "Single Purpose": Fire Suppression
  - "Multi-Faceted": Fire Suppression
    Search and Rescue (land, calm and moving water)
    Airborne sensor and data link to Battalion Chiefs
    Emergency Medical Service (EMS) transport

- Aircraft certification options are "Restricted Category" (military surplus) helicopters or FAA certified "Transport" (civil) helicopters.

- FAA "Transport" certificated helicopters can be either "single-engine" or "multi-engine" helicopters.

- Many public safety helicopter programs initiated service with a "surplus" military helicopter as a "proof of concept" aircraft and evolved into a multi-engine "civil" helicopter program.

- Single-engine helicopters are best suited for fire suppression over sparsely populated and relatively open areas.

- Multi-engine helicopters offer significant advantages when operating over water, over populated areas, and when engaged in prolonged "high" (OGE) hovering such as "hoisting operations."

- More specific recommendations will be made in the Final Report.

Comment period:

- Deputy Chief Miller stated from an operational standpoint, we want to support our personnel with the best tools and safest equipment, and want to continue with the helicopters.

- Captain Ernst stated the District helicopter is a safe piece of equipment but with reference to the future, would like to see it go into flight reserve status with a new aircraft in its place.

Mr. Negretti stated if resources are available and a multi-faceted program is desired, a twin engine is clearly a better aircraft. A single engine is safe but the amount of risk in certain operating environments will be minimized with a twin-engine helicopter in high altitude and hot weather performance or in a hoisting operation.

- Director Jones stated fiscal capability would be discussed at a future workshop. There are numerous potential missions to validate the District's investment in air operations such as high rises, huge grassland and wildlife areas around the American River Parkway, water rescue, levies and the present and potential exposure for high water/ flood issues.

- Greg Johnston of the Sheriff's Department stated he was also a pilot and the accident involving their helicopter was due to a mechanical failure. Even if it had been multi engine, he didn't know if it would have made a difference because the pilot turned into the ravine to avoid hitting people.

- Approximate costs: rebuilt single-engine certified B-210 lists at the high to low $3 million; older twin-engine B-212 no longer manufactured can be bought as a used aircraft from $1.5 million with high time to $3 million if low time; B-412EP currently in production can be bought used from $4 million to $7 million depending upon low or high time.

- Aircraft does not have a set life but parts are difficult to obtain after 20 or 30 years.

- Need to capture the hours used on responses; comparative analysis between single/multi engine – training hours needed/mandatory; FAA regulations for aircraft and pilots. Fiscal analysis for future discussion to take into consideration any additional expenses for the FAA certification for aircraft and crew.

- Mr. Negretti stated the handling characteristics of the B-210, B-212 or B-412EP are similar to the current aircraft and transition would be relatively easy. Multi-mission aircraft require a more extensive scope of training involving more cost.

- Acting Chair Trujillo stated we need to incorporate the maintenance costs of the twin engine B-212, B-412EP, and the B-210 in the analysis.

- Assistant Chief Johnson stated Los Angeles County, Orange County, Kern County, and the local law enforcement agencies are being surveyed for competitive salaries to ensure the ability to recruit quality personnel.

- Mr. Negretti stated this clearly is a policy decision on behalf of the Board in determining the mission. We have been focusing on aircraft and operations but have started to move into the area of organizational structure, staffing, salary, job descriptions, schedules, training, safety program, etc. If it is the Fire Chief's direction, he will respond to these issues at a final workshop and wrap it up in a similar presentation to see how that affects policy decisions.

ADJOURNMENT: Acting Chair Trujillo adjourned the meeting at 11:45 a.m.

Matt Kelly, President

Thomas J. Lawson, Secretary

Charlotte Tilson, Clerk of the Board